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EXAMINER

NGUYEN, LAUREN

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 06/06/2008 have been fully considered but they are not persuasive.
2. The applicant argues (see page 7) regarding the amended **claim 1** that the Examiner's Response on paragraph 4 of Office Action dated 03/06/2008 is unclear. Applicant argued that the excellent effect as claimed in claim 1, which included new features that were not presented in the previous claims, was neither suggested nor disclosed in any references cited in the Office Action. The argument was irrelevant and not persuasive, since **claim 1** necessitated a new ground of rejection and was rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al.** in view of **Aida et al.**
3. The applicant argues (see pages 8-9) regarding the amended **claim 1** that there is a possibility that the laminated product of the biaxial film and the -A plate does not show the reciprocal wavelength dispersion characteristics because the retardation of eat layer may be cancelled out. The examiner respectfully disagrees. Kim et al. discloses a birefringent optical film has reciprocal wavelength dispersion characteristics comprising an A plate and a C plate. Since the C-plate has minimal effect on the total in-plane retardation of the birefringent optical film, the reciprocal wavelength dispersion characteristics of the A plate is the reciprocal wavelength dispersion characteristics of the birefringent optical film (in at least paragraph 0037). **VanderPloeg et al.** (in at least column 8, lines 49-56) teaches substituting the biaxial plate $n_{xb} > n_{yb} > n_{zb}$ for the C plate $n_{xb} = n_{yb} > n_{zb}$ in order to achieve the predictable result of producing a birefringent optical film. A slightly change in the n_x direction may not greatly change the property

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of the film. It would have been obvious to one skilled in the art to substitute one birefringent layer for the other to achieve the predictable result of producing a birefringent optical film. In addition, the applicant has not provided any evidence proving that the retardation of each layer will be canceled out.

4. The applicant also argues (see pages 10-11) that it is not appropriate to modify the retardation film of **VanderPloeg** for VA LCD. This is irrelevant and not persuasive. The examiner merely relies on **VanderPloeg** for the teachings of substituting one birefringent layer for the other to achieve the predictable result of producing a birefringent optical film. It would have been obvious to one skilled in the art to modify the film to achieve the predictable result of producing a birefringent optical film.

5. The claim language therefore does not patentably distinguish over the applied reference[s], and the previous rejections are maintained.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 3, 6-7, 10-13, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (US 2006/0098145)** in view of **Aida et al. (US 5,093,739)**; further in view of **VanderPloeg et al. (US 6,567,143)**.

8. With respect to **claim 1**, **Kim et al.** (figure 1A) discloses birefringent optical film comprising: at least one birefringent A-layer (601 or 602); and at least one birefringent B-layer

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(701 or 702), wherein the birefringent optical film is capable of being used for viewing-angle compensating films for VA mode liquid crystal displays (see at least paragraph 0032), the birefringent A-layer has a property satisfying $n_{y_a} \geq n_{z_a} > n_{x_a}$ or $n_{z_a} > n_{x_a} > n_{y_a}$ and the birefringent B-layer has a property satisfying $n_{x_b} \geq n_{y_b} > n_{z_b}$, and the birefringent B-layer has a property satisfying $n_{x_b} > n_{y_b} > n_{z_b}$, and an in-plane retardation of the birefringent optical film has reciprocal wavelength dispersion characteristics (in at least paragraph 0037; since the C-plate has minimal effect on the total in-plane retardation of the birefringent optical film, the reciprocal wavelength dispersion characteristics of the A plate is the reciprocal wavelength dispersion characteristics of the birefringent optical film).

9. **VanderPloeg et al.**, in at least column 8, lines 49-56, discloses the birefringent B-layer has a property satisfying $n_{x_b} > n_{y_b} > n_{z_b}$. Because **Kim et al.** teaches the birefringent optical film, it would have been obvious to one skilled in the art to substitute one birefringent layer for the other to achieve the predictable result of producing a birefringent optical film.

10. In addition, **Aida et al.** (in at least figure 3, column 3, lines 33-36 and 61-64) discloses the birefringent B-layer is formed of a polymer exhibiting positive birefringence (102, see at least column 3, lines 33-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent film as taught by **Aida et al.** because such modification would decrease the synthetic viewing angle dependency (see at least column 3, lines 38-43).

11. With respect to **claim 3**, **Kim et al.** discloses the limitations as shown in the rejection of **claim 1** above. **Kim et al.** does not disclose the birefringent A-layer is formed of at least one of a polymer exhibiting negative birefringence and a polymer exhibiting positive birefringence.

However, **Aida et al.**, in at least figure 3, column 3, lines 33-36 and 61-64, discloses the

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birefringent A-layer is formed of a polymer exhibiting negative birefringence (103, see at least column 3, lines 34-36). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent A-layer and B-layer of the combination of **Kim et al.** as taught by **Aida et al.** because such modification would decrease the synthetic viewing angle dependency (see at least column 3, lines 38-43).

12. With respect to **claim 6**, **Aida et al.** discloses the polymer exhibiting positive birefringence is polyester (see at least column 4, lines 46-50).

13. With respect to **claim 7**, **Kim et al.** (figure 1A) discloses the birefringent optical film meeting a requirement represented by $-3^{\circ} \leq \text{alignment axis accuracy} \leq 3^{\circ}$ (see at least paragraph 0136).

14. With respect to **claim 10**, **Kim et al.** (figure 1A) discloses a laminated polarizing plate comprising a birefringent optical film wherein the birefringent optical film is the birefringent optical film according to claim 1 (see at least paragraph 0030).

15. With respect to **claim 11**, **Kim et al.** (figure 1A) discloses a liquid crystal panel comprising a liquid crystal cell (100-300) and an optical member (figure 1A), the optical member being disposed on at least one surface of the liquid crystal cell, wherein the optical member is the birefringent optical film according to claim 1 or a laminated polarizing plate comprising the birefringent optical film according to claim 1.

16. With respect to **claim 12**, **Kim et al.** (figure 1A) discloses a liquid crystal display comprising a liquid crystal panel, wherein the liquid crystal panel is the liquid crystal panel according to claim 11.

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17. With respect to **claim 13, Kim et al.** (figure 1A) discloses an image display comprising the birefringent optical film according to claim 1.

18. With respect to **claim 15, Kim et al.** (figure 1A) discloses the birefringent optical film according to claim 1, comprising one birefringent A-layer (601 or 602) and one birefringent B-layer (701 or 702).

19. **Claims 2 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al.** in view of **Aida et al. and VanderPloeg et al.**, and further in view of **Sakamoto et al. (US 2003/0125503)**.

20. With respect to **claim 2**, the combination of **Kim et al./ VanderPloeg et al./Aida et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kim et al./Aida et al.** does not disclose the birefringent B-layer meets a requirement represented by $0.005 \leq \Delta n_b \leq 0.2$. However, **Sakamoto et al.**, in at least paragraph 0026, lines 15-20, discloses the birefringent B-layer meets a requirement represented by $0.004 \leq \Delta n_b \leq 0.6$. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent B-layer of the combination of **Kim et al./ VanderPloeg et al./Aida et al.** with the teaching of **Sakamoto et al.** because such modification would "ease the controlling of the film thickness at the time of attaching to a liquid crystal display device to obtain a retardation value" (see at least paragraph 0026, lines 24-28).

21. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2144.05

22. With respect to **claim 17**, the combination of **Kim et al./ VanderPloeg et al./Aida et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kim et**

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al./ VanderPloeg et al./Aida et al. does not disclose the birefringent B-layer is formed of at least one polymer selected from the group consisting of polyamide, polyimide, polyetherketone, polyaryletherketone, polyamide imide and polycsterimide, and the thickness of the birefringent B-layer is 0.1 to 30 microns. However, **Sakamoto et al.**, in at least paragraphs 0028 and 0038, discloses the birefringent B-layer is formed of at least one polymer selected from the group consisting of polyamide and polyimide, and the thickness of the birefringent B-layer is 0.1 to 30 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent B-layer of the combination of **Kim et al./ VanderPloeg et al./Aida et al.** with the teachings of **Sakamoto et al.** because such modification would secure excellent functions for an optical film and achieve an optical film with sufficient uniformity.

23. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2144.05

24. **Claims 4 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al.** in view of **Aida et al. and VanderPloeg et al.**, and further in view of **Kuwabara et al. (5,875,014)**.

25. With respect to **claims 4 and 14**, the combination of **Kim et al./ VanderPloeg et al./Aida et al.** discloses the limitations as shown in the rejection of **claim 3** above. The combination of **Kim et al./ VanderPloeg et al./Aida et al.** does not disclose the birefringent A-layer is formed of a mixture of the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence (**claim 4**) and the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence contained in the mixture for forming the birefringent A-layer are

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compatible with each other (**claim 14**). However, **Kuwabara et al.**, in at least column 5, lines 14-20, discloses the birefringent A-layer is formed of a mixture of the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence (**claim 4**; see at least column 5, lines 16-18) and the polymer exhibiting negative birefringence and the polymer exhibiting positive birefringence contained in the mixture for forming the birefringent A-layer are compatible with each other (**claim 14**; see at least column 5, lines 40-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent A-layer as taught by **Kuwabara et al.** because such modification would achieve an excellent black-and-white display of a liquid crystal display device apparatus (see at least column 2, lines 35-38).

26. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al.** in view of **Aida et al. and VanderPloeg et al.**, and further in view of **Kaneko et al. (US 6,693,692)**.

27. With respect to **claim 9**, the combination of **Kim et al./ VanderPloeg et al./Aida et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kim et al./ VanderPloeg et al./Aida et al.** does not disclose the birefringent optical film meeting requirements represented by: $|\Delta_{nd_a}| \geq |\Delta_{nd_b}|$ and $\alpha_a < \alpha_b$. However, **Kaneko et al.**, in at least column 15, lines 35-39 and lines 60-64, figure 8, 9-11, and 16, discloses $|\Delta_{nd_a}| \geq |\Delta_{nd_b}|$ and (curve 32 of the birefringent A-layer > curve 31 of the birefringent B-layer).

$$28. \quad \alpha_a < \alpha_b \Rightarrow \frac{\Delta_{nd_{a430nm}}}{\Delta_{nd_{a550nm}}} < \frac{\Delta_{nd_{b430nm}}}{\Delta_{nd_{b550nm}}} \Rightarrow \frac{0.52}{0.5} < \frac{0.4}{0.38} \Rightarrow 1.04 < 1.53 \text{ (figure 16)}$$

29. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the birefringent optical film as taught by **Kaneko et al.** because such modification would

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change the polarization state at every wavelength and provide an excellent black display (see at least column 0015, lines 45-47; and column 16, lines 21-25).

30. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al.** in view of **Aida et al. and VanderPloeg et al.**, and further in view of **Van De Witte et al. (US 6,437,843)**.

31. With respect to **claim 19**, the combination of **Kim et al./ VanderPloeg et al./Aida et al.** discloses the limitations as shown in the rejection of **claim 1** above. The combination of **Kim et al./ VanderPloeg et al./Aida et al.** does not disclose the birefringent A-layer has a property satisfying $n_{ya} > n_{za} > n_{xa}$. However, **Van De Witte et al.**, in at least column 4, lines 30-35, discloses the birefringent A-layer has a property satisfying $n_{ya} > n_{za} > n_{xa}$. Because the combination of **Kim et al./ VanderPloeg et al./Aida et al. and Van De Witte et al. (US 6,437,843)** teaches the birefringent optical film, it would have been obvious to one skilled in the art to substitute one birefringent layer for the other to achieve the predictable result of producing a birefringent optical film.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lauren Nguyen whose telephone number is (571) 270-1428. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/L. N./

Examiner, Art Unit 2871

/Andrew Schechter/

Primary Examiner, Art Unit 2871